Improving AVO Fidelity by NMO Stretching and Offset Dependent Tuning Corrections

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Abstract/Excerpt

Wavelet stretching due to NMO correction of seismic gathers causes problems in AVO. Coupled with the degrading action of wavelet stretching is offset dependent tuning for thin beds. Even though tuning is inherent in the data before NMO correction, its effect on AVO is more obvious on NMO corrected data. Studies have been carried out for an analytical understanding of NMO stretching and offset-dependent tuning and their correction to improve AVO fidelity. Based on these studies, we have implemented the NMO stretching and thin-bed tuning corrections in a practical fashion for production AVO analysis. Both synthetic and real data examples show that these corrections are necessary for performing reliable AVO analysis.